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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/720,912	11/24/2003	Herbert Ulmer	FDN-2726	5288

7590

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## INTERNATIONAL SPECIALTY PRODUCTS

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EXAMINER

LEE, RIP A

ART UNIT

PAPER NUMBER

1713

DATE MAILED: 08/17/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

10/720,912

Applicant(s)

ULMER ET AL.

Examiner

Rip A. Lee

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on May 26, 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 2-9 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 2-9 is/are rejected.
- 7) ☒ Claim(s) 1, 4, 5, 8 and 9 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

### **DETAILED ACTION**

This office action follows a response filed on May 26, 2006. Claims 2-9 are pending.

#### ***Claim Objections***

1. Claim 1 is objected to because of the following informalities: Please insert “group consisting of” after the word “selected.” Alternatively, Applicant may use the term “selected from” with use of the conjunction “or” instead of “and” to list Markush elements. Appropriate correction is required.
2. Claims 4 and 5 are objected to because of the following informalities: The parent claim is drawn to a polymer rather than a solution. Therefore, the phrases, “A solution according to claim 2” and “solution of claim 4” are inconsistent with the subject matter of the parent claim. Applicants may claim a solution comprising the polymer of claim 2 instead. Appropriate correction is required.
3. Claim 8 is objected to because of the following informalities: Since claim 7 is drawn to a personal care product, the phrase, “hair care product according to claim 7” is inconsistent with the subject matter of the antecedent claim. Appropriate correction is required.
4. Claim 9 is objected to because of the following informalities: Since claim 7 is drawn to a personal care product, the phrase, “film-forming composition according to claim 7” is inconsistent with the subject matter of the antecedent claim. Appropriate correction is required.

***Claim Rejections - 35 USC § 102***

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

***Claim Rejections - 35 USC § 103***

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

8. Claims 2-6 are rejected under 35 U.S.C. 102(b) as being anticipated by Chowdury *et al.* (*J. Appl. Polym. Sci.*, 1998).

The journal article discloses graft polymerization of methyl methacrylate onto polyvinyl alcohol in aqueous medium using ceric ammonium sulfate initiator. Graft efficiencies of up to about 80 % and reported (see Figures 2-6).

9. Claims 2 and 3 are rejected under 35 U.S.C. 102(b) as being anticipated by Gonda (JP 9-157422).

The prior art of Gonda relates to graft polymerization of polyvinyl alcohol with a mixed monomer system of acrylamide and acrylic acid, designated (A) and (B), respectively, in an A/B ratio of 100/0 to 50/50 (paragraph [0011]). Table 1, entries 1-3 show grafting of PVA with acrylic acid alone (AM/AA ratio is 0/100).

10. Claims 2-6 are rejected under 35 U.S.C. 102(b) as being anticipated by Rabasco *et al.* (U.S. 6,348,256).

Example 6 of Rabasco *et al.* describes graft polymerization of vinyl pyridine (52 g) onto polyvinyl alcohol (125 g) in aqueous medium in the presence of ammonium persulfate initiator.

11. Claims 2-6 are rejected under 35 U.S.C. 102(b) as being anticipated by Bedell (U.S. 4,080,346).

The prior art disclose a graft polymer that is made by grafting vinylpyridine onto polyvinyl alcohol (see structure, col. 6, line 18). Examples I-IV illustrate the process in which grafting (graft ratio 2/1 and 1/3) is carried out in water using ceric ammonium sulfate as the initiator.

12. Claims 2-6 are rejected under 35 U.S.C. 102(b) as being anticipated by Takahashi *et al.* (U.S. 5,100,949).

Takahashi *et al.* discloses graft copolymer prepared by graft-polymerizing a mixture of methyl (meth)acrylate monomer (E), a lower hydroxyalkyl (meth)acrylate monomer (F), and (meth)acrylic acid monomer (G); claim 3. Examples of lower hydroxyalkyl (meth)acrylate monomer are hydroxyethyl acrylate (used in examples 14-24) and hydroxyethyl methacrylate (col. 4, line 30). As seen in the experimental, grafting is accomplished by performing the reaction in aqueous medium in the presence of ammonium persulfate initiator.

13. Claims 2-6 are rejected under 35 U.S.C. 102(b) as being anticipated by Bair *et al.* (U.S. 5,789,488).

Bair *et al.* disclose a further aspect of the invention in which graft copolymers are in which non-ionic monomers are grafted onto polyvinyl alcohol (col. 3, line 50). Such monomers include methyl (meth)acrylate, hydroxyethyl (meth)acrylate, as well as (meth)acrylic acid (col. 3, lines 55 and 64-66). As shown in the examples, graft copolymers of the invention are prepared in aqueous medium using ceric ammonium nitrate as the initiator.

14. Claims 1 and 2 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP 43-13047.

The foreign document relates to graft polymerization of monomer onto a polymer in the form of a sheet. Suitable polymers are polyvinyl alcohol, polyethylene, polypropylene, PVC, polyesters, and cellulose, and grafting monomers include styrene, methyl methacrylate, acrylic acid, vinyl acetate, vinyl chloride, butadiene, maleic acid, and mixtures thereof (abstract). There is no indication of the amount of grafting monomer, and there is no specific reference to an embodiment where styrene, methyl methacrylate, or acrylic acid is grafted onto polyvinyl alcohol. However, in view of the fact that the instant claim recites the broad range of 1-99 wt % and 1-50 wt %, and in light of the fact that the number of polymer and grafting monomer is limited, one having ordinary skill in the art would have found it obvious to arrive at the subject matter of the instant claims based on the general disclosure of the prior art.

15. Claims 2-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jacquet *et al.* (U.S. 4,283,384).

Claim 1 of Jacquet *et al.* discloses a shampoo composition comprising an aqueous solution of a polymer produced by polymerizing an unsaturated monomer selected from the group consisting of (meth)acrylic acid, alkyl (meth)acrylate, hydroxyalkyl (meth)acrylates, (meth)acrylamide, dialkylamino alkyl (meth)acrylates, and diallyl ammonium salts with about 15-95 wt % of polyvinyl alcohol, *inter alia*, said polymerization being carried out in an aqueous medium in the presence of ceric ammonium nitrate. The reference does not show examples of graft copolymers of polyvinyl alcohol which incorporates these monomers, however, it is

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maintained that one of ordinary skill in the art would have been obvious to make such graft copolymers and thereby arrive at the subject matter of the instant claims because Jacquet *et al.* describe such graft copolymers in the general claim. It would have been obvious to one having ordinary skill in the art to make these polyvinyl alcohol based graft copolymers especially in light of the fact that examples 14 and 15 teach preparation of graft copolymers of dialkylamino alkyl (meth)acrylates and polyvinyl alcohol. Since the patent teaches the synthesis of this graft copolymer, one of ordinary skill in the art would have expected use of the same process to make the graft copolymers of the instant claims with a reasonable expectation of success. One of ordinary skill in the art also would have found it obvious to make a shampoo comprising these copolymers because the prior art indicates their specific end use.

### ***Response to Arguments***

16. Applicant's arguments with respect to the rejection of claims over Bair *et al.* and Jacquet *et al.* have been considered fully, and are persuasive. Bair *et al.* discloses use of 2-methacryloyloxyethyl trimethylammonium chloride (METAC) for grafting PVA instead of methacryloyloxyethyl trimethylammonium sulfate. However, Bair does disclose use of other graft monomers presented in the Markush group of the instant claims (see paragraph 5, line 6 of previous office action and paragraph 13 of this office action). The rejection of claims under 35 U.S.C. 102(b) over Jacquet *et al.* has been withdrawn. The prior art is now used in an obviousness type rejection of claims under 35 U.S.C. 103(a).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Rip A. Lee whose telephone number is (571)272-1104. The examiner can be reached on Monday through Friday from 9:00 AM - 5:00 PM. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Wu, can be reached at (571)272-1114. The fax phone number for the organization where this application or proceeding is assigned is (571)273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <<http://pair-direct.uspto.gov>>. Should you have questions on the access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll free).

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August 4, 2006



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